

Still \$1.50

October 1987

# MICHIGAN ATARI MAGAZINE

A CO-OPERATIVE PUBLICATION OF THESE ATARI CLUBS:  
C.H.A.O.S. (LANSING) — G.A.G. (FLINT)  
I.A.G. (SAGINAW) — BAY CITY / MIDLAND  
B.C.A.H.G. (BATTLE CREEK) — M.A.U.G. (ANN ARBOR)  
G.K.A.U.G. (KALAMAZOO) — G.R.A.S.S. (GRAND RAPIDS)

## Atari News

and COMMENT, by JOHN NAGY

**MAGIC in DETROIT-** The ATARIFEST was GREAT, and we have details and photos IN THIS ISSUE of MAM.

**THE PRODUCTS ARE COMING...** although we've heard it for months, ATARI now says that the MEGA machines, the SX-212 modem, the XE GAME SYSTEMS, and even the 80-column boxes are IN THE U.S. and are being delivered to dealers even as we speak. Honest. Well, that's what they say. Also, the PC CLONE should follow within 30 days, the LASER PRINTER still later, and the new 8-bit disk drive "when it's ready".

**ONE MORE PRODUCT FOR THE "SOON" LIST:** CD-ROMS! ATARI announced their COMPACT LASER DISK MEMORY device at Britain's PERSONAL COMPUTER WORLD SHOW in September. "To be shipped by Christmas", it will hold up to 350 MEG per disk, will play audio CD's, will play up to an hour of VIDEO, and sell in the UK for \$650. Christmas in what year?

**ATARI STOCKWATCH:** DOWN again this month, ATARI stock dipped below \$11, sliding from the mid-summer post-split high of about \$16 a share. IF and WHEN the new products see SHELVES, expect another upturn.

Meanwhile, ATARI had a few million sitting around with nothing to do, so they bought their own chain store. FEDERATED, a west-coast electronics chain (sort of HIGHLANDS without refrigerators) lost a few mils last year, and ATARI figures to do better at the helm.

**PRICES:** The MEGA systems will be just under \$2000 (that's TWO THOUSAND!) for the 2-meg, and just of \$2000 for the 4-meg. If those prices seem too high, don't worry, most of us won't be able to find any way to buy one anyway, since ATARI is planning to be HARD LINE on "NO MAIL ORDER" for the Mega line, and soon, the 1040ST too. We heard this before too, but the marketing folks at ATARI have convinced the TRAMIELS that cutthroat mail discounting is preventing a dealer organization from succeeding. This plan will get more \$\$\$ for the retail dealers, which of course means that they might actually want to SELL them. I hope it works, but it is also going to be SO VERY HARD to qualify as a MEGA/1040 dealer, that us small-towners may have to drive all day to buy an ATARI.

New at ATARI is WALT WILSON, formerly of APPLE, who will be in charge of building the dealer network that has been so desperately needed for so long.

**BARCODE** equipment for the 8-bit ATARI has long been asked for, and is here from XENIA RESEARCH in WASHINGTON. For \$179, you get the barcode reader and software that lets it imitate keystrokes to the K: handler in any 800, XL, or XE. Also included is the barprint software, point-of-sale and other application software, and complete documentation for adapting your own software in just about any language or DOS.

It plugs into joystick port 1. It may sound a little expensive, but barcode wands for ANY machine are regularly over \$100 WITHOUT software. This might be the ideal thing for cheap automation of small business counter jobs. Contact XENIA, Box 4675, Federal Way, WA 98003, (206) 927-7018.





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# CASTLE COMMUNICATIONS

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**MICHIGAN ATARI MAGAZINE**

**2**

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**October 1987**

# M. A. M. this Month

## Editors:

Rich and Judy Barnes (517) 349-0513

CLUBS:	PAGE
C.H.A.O.S. (LANSING)	5
B.C.A.U.G. (BATTLE CREEK)	8
G.R.A.S.S. (GRAND RAPIDS)	9
G.K.A.U.G. (KALAMAZOO)	9
G.A.G. (FLINT)	11
W.A.U.G. (ANN ARBOR)	13
T.A.G. (SAGINAW/TRI CITIES)	14

## FEATURES:

ATARI NEWS	COVER
EDITORS NOTE - A Correction	15
MAGIC SHOW REVIEW	16
MEGA-DETAILS (NEW PRODUCTS)	19
SUCCESS AND THE BBS	20
ADD FUNCTION KEYS TO YOUR XL/XE	21
ST NOTES by LEROY VALLEY	22
SI-TRANSFORMER CONFERENCE	22
MORE ATARI NEWS	25
C LANGUAGE COURSE, Lesson 3	27
LAST HACKS - ERROR WHAT??!	30

## ADVERTISERS:

CASTLE COMMUNICATIONS	2
SHUBERT CORPORATION	4
NATIONAL COMPUTER CLINIC	10
MARS MERCHANDISING	12
COMPUTER EMPORIUM	26
MEI/MICRO CENTER	31
COPY QUICK	COVER

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This publication is the official newsletter of several independent groups of Atari 8-bit and 16-bit computer users. It is intended for the information and education of their members as well as the dissemination of Atari related information. Opinions expressed in this publication are those of the respective author and are not in any way official opinions of the associated user groups.

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## Publisher's Note

by JOHN NAGY  
(517) 487-5646

The DETROIT MAGIC ATARI SHOW was a smash success! Although I had prepared a review, Z-MAG ran such a comprehensive one, I dropped mine in its favor!

At the show, I talked to WAUG (Ann Arbor area ATARI club) officers about their having dropped out of MAM. They were shocked! It was a grand set of misunderstandings, but now set right again. WAUG is back in place in MAM.

IN FACT, MAM may move to ANN ARBOR for production, starting with the DECEMBER issue if all goes well. The member clubs are in process of being polled on their likes and hopes for the magazine, and prospective editors BILL AND PATTY RYAL have big plans. Included are the possible inclusion of MACE and GLASS (an ST club growing in Detroit), increased COUNTER SALES of MAM, and a REDUCTION of costs to the member clubs. A tall order for themselves, I hope this will work out well. If it does, MAM will have reached the goal I set almost two years ago- Statewide coverage, ten or more member clubs, and a circulation of perhaps 1,500 copies. More info next month!

Last month I talked about BEST PRODUCTS selling "MAGIC SAC COMPATIBLE" cartridges at ATARIFESTS.

I repeated reports that said it was ripping off the hard work of DAVID SMALL and his MACINTOSH EMULATOR. After more investigation, it appears (as is so often the case) that there is another side to this story. The "rip-off" amounts to BEST selling a STANDARD EMPTY CART BODY. This is the same as you will find wrpped around any cart ROM chip for the ST. Additionally, BEST sells the MAC ROMS, needed if you want to use a LEGITIMATELY purchased MAGIC SAC from Small at DATA PACIFIC. The fact that if you acquire the SAC software, buy an empty cart, and slap the ROM in it, you can "emulate" the SAC... well, that isn't quite the RIP I had been led to expect. True, their advertising at earlier shows made it appear that BEST encouraged the buyer to "rip" the MAGIC SAC software, but BEST now steers clear of that. David Small still claims that BEST had actively pushed buyers towards piracy of his product, and there is some controversy over whether ANY, ALL, or SOME of the MAC ROMS that BEST sells are LEGIT or COPIES. Still, BEST is at least argueably NOT the villains they have been made out to be, and my apology for stating the case with half the facts.

David has sensibly modified his latest version of the AMAZING MAGIC SAC to ONLY work with HIS new cartridge.



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Membership dues are \$12.00 per year and entitle the member to a 1 year subscription to the Michigan Atari Magazine, a free disk from our regular library, access to our other libraries and facilities, as well as access to our other resources. Dues may be paid at any C.H.A.O.S. meeting or by mail. If not using an official Membership Application, please include your Name, Address, Phone and a list of your equipment and interests.

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C.H.A.O.S.  
P.O. Box 16132  
Lansing, MI 48901

General meetings of the membership take place several times a year. 8-bit and 16-bit Special Interest Group meetings take place monthly. S.T.I.N.G. (S.T. Interest Group), for Atari ST owners, meets on the SECOND Saturday of the month. The 8-bit SIG Atari, for 400/800, and XL/XE owners, takes place on the THIRD Saturday of the month. The meetings take place at the MSU Physics-Astronomy Building, Physics Road, Room 118. Meetings begin at 10:00 am sharp and last until 1:00 pm. Members and guests are welcome to any SIG meeting that interests them. To get to a meeting, take East Grand River to the Collingwood Entrance for MSU. The first available left turn is Physics Rd. The Physics-Astronomy Building is about 1 block from the corner, on the right hand side. Park in the gated lot just past the building.

Illegal copying, or any violation of copyright laws, is not condoned or allowed at any C.H.A.O.S. sponsored function, including the club BBS.

## ELECTED AND APPOINTED OFFICERS OF CHAOS

Position	Name	Phone #
President	Leo Sell	349-0404
Vice President	John Baker	641-4430
Sec'y-Treasur.	Gary Ferris	393-2593
8-bit Rep	Marvin Goldstein	332-4160
16-bit Rep	John Johnson	355-4219
Membership	Gary Ferris	393-2593
Library Mgr.	John Baker	641-4430
ST Librarian	Sally Nagy	484-1976
XL/XE Librian.	Bill Johnson	675-7166
Publ. Librarn.	Richard Evans	351-2381
ST Publ. Libr.	Chet Kapusinski	676-4539
XL/XE SIG Cor.	Guy Hurt	484-7675
ST SIG Coordn.	Brian Goluska	332-4415
BBS Sysop	John Nagy	487-5646
BBS Librarian	John Lewis	339-1793
Newsltr Editor	Rich Barnes	349-0513
Advertising	Jeff Bone	321-5510

## Presidential Address

Leo Sell

October is here, October is here. Good things happen in October!! My birthday for one. Perhaps more important to you readers however, is the ANNUAL CHAOS AUCTION.

Each year in October CHAOS members and guests enjoy an opportunity to clean out their closets, sell their surplus stuff, and buy some bargains in hardware, software and sundry junk.

In the meantime the Club makes a little money too. Here are the ground rules:

The AUCTION will take the place of the bulk of the 8-bit SIG meeting on October 17. Sellers should register from 9:30 to 10:00, and buyers from 10:00 to 10:15. The Auction will start at 10:15. We will begin with ST equipment and software and then go on with the 8-bit items.

### POLICIES and RULES:

1. CHAOS collects ten percent of the FINAL BID for each SOLD item.

If a MINIMUM BID is required and the Seller does not accept the high bid, CHAOS will collect ten percent of the MINIMUM BID, not less than \$1.00 and not exceeding \$5.00.

2. All Buyers and Sellers must register for separate Buyer and Seller numbers.

3. Items for sale must be marked with the Seller number and the minimum bid, if any.

4. All software must be original, preferably with the original documentation.

5. All hardware in need of repair must be marked as such.

6. Merchandise must be paid for before removal from premises. All payment is due by the close of the meeting.

7. All merchandise is sold AS IS.

So, clean out those closets. Bring those checkbooks. Make a little and spend a lot. Help CHAOS and yourself, October 17.

Other club business is the usually plea for help and assistance. We are STILL in need of a new 8-bit Publications Librarian. The newsletter and libraries can always use more assistance.

VOLUNTEER TODAY!!!!



*"The computer is down! Everybody think!"*

## **Disk Library**

THE LIBRARY TABLE  
by John Baker

It's over. Summer that is. What cruel law of physics compresses the months of summer into an insignificant blip on the calendar, while at the same time allowing 11 1/2 months of winter to fill the remaining time. As you have probably gathered, I am not a winter type person. Oh well, spending more time over the keyboard is much more justifiable when the temperature drops.

Well, sure seems good to finally have the Mega ST's and the PC machines in the stores and selling like hotcakes after the long wait. No, don't panic thinking that this momentous event slipped by right under your nose without you being aware. Yuk, Yuk, Yuk. Just a little bit of humor to start the column out with. Now for the real news.

Auction time!!! October is the time to pick up unbelievable bargains at the annual C.H.A.O.S. auction. Bring anything of value to be auctioned off by Mr. Auction himself (Leo). Ten percent of the selling price goes to the club for this service. Don't miss it!

Don't miss out on the new disks that are being continually added to our fine software library. See some of these new selections at the meetings. Our librarians will be happy to fill you in on all the details.

Use your library to make your work easier. See you at the meeting.

ST LIBRARY  
by Sally Nagy

New disks for this month are as follows:  
UTILITIES B15, GFA BASIC Tips and programs,  
UTILITIES B16, \*ASSEMBLR, \*C, \*MODULA2 and  
\*PPASCAL Source and tips; UTILITIES B17,  
\*ASSEMBLY, \*C\_SOURCE and \*PASCAL source and  
tips; UTILITIES B18, STBASIC1.ARC and  
STBASIC2.ARC--ST BASIC FILES, TREEFIX.ARC--in  
C, and some games for \*TINYBASIC

UTILITIES C16, MICROCAD.PRQ a drawing program,  
DGEN.TOS a RLE to Degas converter, FED.PRQ a  
font editor, PVIEW.PRQ to view RLE pictures,  
and more.

UTILITIES C17 features E\_CUBE.PRQ, Escher cubes  
an isometric drawing program, MFPRINT.TTP a  
multifile print program, NEOFUN.PRQ which  
allows you to add options from a GEM menu to



# BITS AND PIECES

FROM THE

## BATTLE CREEK ATARI USER GROUP

Next Meeting Oct. 15  
At the Vo-Ed Building



### Meeting Minutes

We will be meeting the third Thursday this month as the 1st falls on a Thursday. Hopefully you will be reading this BEFORE the meeting; not after. We meet at the Calhoun Area Vocational Center at 475 E. Roosevelt. The room is directly across from the office, between the two front entrances. Meeting starts at 7PM and goes to 9.

At this month's meeting, we will be having a face off between the U.S. Doubler and the Happy. Both enhancements offer faster read/write speeds to your disk drives plus the ability to back up your copy protected programs. Both allow true double density. This should be an interesting comparison of the two Souped up 1050's.

We will be having another disk of the month (DOM). Last month's double disk special was a real success. I hope you have fun with Super States 3-D. If anyone draws up some new 3-D files please bring them to the meeting. For those that missed the last meeting we still have some copies of Turbo Basic and Super States.

The club library has recently got a big shot in the arm. Some 180 new double sided disks for the 8 bit and 80 new ST disks! We hope to have a new library listing by the meeting, or soon after.

New Library policy. The disks will be sold for \$1.00 or exchange for a clean disk to members only. This is \$.50 per disk side! Your club and Atari "Power without the price." Folks this a value you just can't beat. The librarian will need your order before the meeting. We generally don't have time at the meetings for disk copying.

New product releases from Atari still seem to be off somewhere in the future. I got a guess-imate of before Christmas for the new Atari products from Sandy Austin. The three inch disk drive for the 8 bit machine is dead. We saw the XE game machine, the new 1200 baud modem, the lazer printer the Mega ST at the Magic Show. Now we need some Magic to show up in the stores.

### Library Additions

As you may or may not have heard, we the Battle Creek Group, have rented the CHAOS complete library for copying.

Dan Egan, myself and Josephine (ST) have been laboring over it for the past few weeks and with a little luck will have it completed by the next meeting. I had no idea it would be thg over it for the past few weeks and with a little luck will have it completed by the next meeting. I had no idea it would be this tedious or time consuming with the actual copying, categorizing, and indexing, but it is coming along and we should have a library anyone would be proud of. There will be additions to games, sound library, education, Koala Pics, ANTIC and ANALOG MAG. disks and a large utilities section. There has been an addition of 180 8-bit disks and 80+ ST disks. As a member, past, present or future, there should be enough information and programs to keep anyone busy for the rest of their lives.

Some people have complained about the price of software on the market (\$20 to \$40). Well, complain no more; our library has plenty for only \$1 per doublesided disk of any category. The \$1 is just to cover part of the cost of renting the CHAOS Library which was \$100 and really put a big dent in our coffers. If we have a whole listing by next meeting please take one and show it to your non-member friends, for this alone should spark some interest in our ATARI GROUP. Believe me there has to be more interest for this group to survive.

### NEW BCAUG OFFICERS

CHAIRMAN:	
Chuck Steele	964-1701
LIBRARIAN:	
Todd Harris	965-5354
NEWSLETTER:	
Tom Siemietkowski	963-4475
SECRETARY:	
Mike Engle	964-3033
TREASURER:	
Josephine Yeager	968-8401
MEMBERSHIP:	
Dennis Martin	962-1024





## GRAND RAPIDS ATARI SYSTEMS SUPPORTERS



## GREATER KALAMAZOO ATARI USERS GROUP

### G.R.A.S.S.

**President** George Nosky  
2440 Parkridge S.E.  
Grand Rapids MI 49506  
616 942 1527

**Secretary** Charles Baughman  
2069 Fawn  
Middleville MI 49333  
616 795 7373

### News of our last meeting

The big event at our September meeting was the resignation of our President Ron Fargo. Ron cited the increase on work at his job as the reason for having to step down. George Nosky will finish out Ron's term which expires in January.

Due to an error on the part of your leadership the library-meeting room is booked for the first Wednesday of October, so we will meet on Oct. 21. The meetings for the rest of the year will be on the first Wednesday of each month.

There will be a Board of Directors meeting at the home of George Nosky on Oct. 13 at 7:30.

Other news from the Grand Rapids Area: The Electronics Boutique has opened a store in Woodland Mall. The store is managed by Skip Metzler. Their phone number is 616-949-5800. I had a nice talk with Skip the other night. He says that they are part of a large chain of stores. This enables them to get quick service (often overnight) from their warehouse. Their supply is big and they have more things in the store than any I have seen in Grand Rapids, and a large catalog. They also stock the 16-bit Atari Equipment. The prices I saw were in line with the mail-house prices and you don't have to wait.

As you know, 8-bit Atari software is hard to find in G.R., especially on the south side. Maybe if we show an interest Electronics Boutique will change this. They seem to be trying at this point. Stop in and look around and tell them about the club magazine! Maybe they will buy an Ad!

### Pre's Report

Septembers meeting was a good one! We talked about our new BBS. There were a number of other things.

\* If you have call waiting on your phone then you are causing us problems on the BBS. When you are uploading or downloading and you get a call then BBS crashes, and we don't know why. Please watch this. Thanks

\* We are meeting in room 305 in Dewing Hall. We have met there for the last couple of meetings but some of you didn't know (sorry Gus). Next meeting we will have a sign on the front door.

\* Our next meeting will be a real special one, Alan Lenan will be bring in all his ST and Midi gear to show us how to make music with the ST. From what I understand this will really be a show!!! Don't miss it.

\* Over the next several months we will cover several topic in our meetings. They will be: Desk top Publishing (8 bit and ST), Language and utilities, and last but not least, Games (can't miss that!).

\* We are looking for a picture to put on our BBS intro screen. You will find a utility on the BBS to do this with.

\* I had a number of requests from people to teach a class on SynCalc and SynFile. So over the next three months I will spend some time after the meeting and teach those that are interested on how to use and merger these two programs. I will also include B/Graph and a word proccesor merge as well.

\* Our next meeting will be October 10 at 11:00 in room 305 on the third floor in Dewing hall see ya there

\* I have had a number of calls lately from people that are interested in the club but can't make it to the next meeting. If you are one of these people you can receive this news letter by sending me a check for \$20.00. Make check payable to GKAUG and send it with your name and address to: Daniel Youngs 607 Lay Blvd Kalamazoo Mi. 49001.

Daniel Youngs 616-388-3164





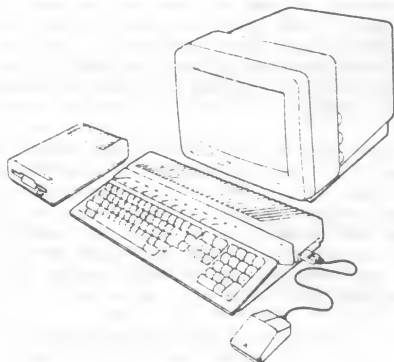
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# GENESEE ATARI GROUP

*Serving the Flint area*

## Presidential Mumbblings for October by Jim Steele

Well, here we go once again with yet another batch of mumblage from the teflon president. In fact, this will be my last column as GAG president. (Try to hold down the cheers :) ) I've had the job ever since I foolishly said, "Gee, I think a user group would be neat". I've decided not to take another term, mainly because I want to spend more time on the Amiga. It's also about time that some new blood took over. When I started the group, I wanted an informal group of hackers (in the true sense of the term). I've never believed that the group should entertain people, rather to provide a place where people could meet and discuss their problems or show off their latest display hack. Be that as it may, it's been an interesting 4 years. I'm not planning to drop out of things Atarian altogether, there's the matter of a few bugs to zap in Cutelabels. But as a practical matter I've already consigned the faithful 800xl to the legendary computer closet. This is not to say that the 800 is useless. It still can do a lot of usefull tasks. Unfortunately, I'm a hobbyist. We aren't satisfied with less than the best we can afford. Now, if they only had a desktop CRAY.....

Good luck to the next el presidente, whoever is picked (more likely drafted!) I'll be available to help with the transition, if needed.

Be sure to come out to the October meeting, we're planning something special for the people who helped out at the ATARI MAGIC show. After the Library business, we will elect next year's officers. (RUN!) Then we will adjourn to Little Ceasar's Pizza. Those of you who helped out at the show will be our guests, the rest will have to chip in!

At the September meeting Jerry gave us a financial report on the Atari show. Apparently, we did very well, with a good showing at the booth and a good share of the gate. We'll get our gate share later when the finances are finished up. When you've got money, you've got to spend it, right? We decided to subscribe to the magazine & disk versions of several magazines. We also budgeted the replacement

cost for our library's disk drives, which are showing their age and will need replacement soon. We're also getting a Post Office Box for the group. Keep an eye on these pages for the new address.

One last thing, the folk at Abacus Software have extended the user groups an offer on their ST books. If enough people are interested we can get quite a deal. The more we get the cheaper each becomes. If you are interested, be sure to come to the October meeting, the offer expires October 15th- the day after the meeting. If you're interested and can't make the meeting, get ahold of us on the FACTS BBS.

Well that's the news from Lake Wobegon, where all the phone lines are clean, all the disks are formatted, and all the downloads are above average. (Sorry, Garrison)

See 'ya on the boards. -Jim

## Software

### GAG DISKS FOR OCTOBER by Jerry Cross

We have eight new disks this month.

For the game players, Disk 229 is for you! Crossword is a great crossword puzzle game. There are 26 sample puzzles on the disk. The game is excellent, but they did not put in a puzzle maker so you can create your own files. Also, ROCKS is a great space game with nice graphics and sound. In CASTLE, the object is to prevent the enemy from climbing ladders to the top of your castle. SCHLOSS is a maze type game, and CRAPS is a good version of the dice game.

Disk #230 is a telecommunications disk. 1030 EXPRESS is a BETA version of Keith Ledbetters excellent terminal program. This is Version 3.0, which adds many new features to the original program. When the final version comes out, I will update this disk. Also on this disk is a demo of the OASIS bbs system.

which is a commercially sold program. Autodial is a goofy little utility that lets you dial your phone by holding it next to the TV speaker. All you do is hold your handset next to the TV!

Disk #231 is another disk of KOALA pics.

Disk #232 is an AMS disk, featuring songs by THE MONKEES! (Kids, ask your folks who they are)

Disk #233 is another AMS disks, this time featuring FLUTE, a huge file of classic music.

Disk #234 and #235 are more great RLE pictures.

And, FINALLY!!! Disk #236 contains CUTE LABELS! This program prints out neat mailing labels using PRINTSHOP Icons. You can use icons on either side of the label (either the same icon, or two different ones!). It prints out text in four sizes, and in any font. The disk comes complete with several sample icons, over 30 fonts, plus several Printshop utilities that were included on past GAG disks. These include Flipper, Shoptool, PSPic, and Picprint.

This program was a huge success at the Atari-Magic show held in August.

That's it for this month. See you all at the next meeting!

→ → → → → → → → → →  
JL JL JL JL JL JL JL JL JL

### Genesee Atari Group

meeting changes

The 4th Saturday sessions are moving back to the Neithercut School, beginning with September's meeting.

Next Meetings:

September 26 10am Neithercut

October 14, 6:30pm Neithercut

\* Officer election \*

October 24, 10am Neithercut

November 11, 6:30pm Neithercut

Genesee Atari Group is a non-profit user group based in Flint, Michigan. GAG meets on the second Wednesday of the month at Neithercut school, 2010 Crestbrook, Flint MI (6:30pm). We also have a 4th Saturday session during the school year at 10 am.

Add \$3.00 Shipping M-F 10am-7pm CST


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**Merchandising**  
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## FLOYD SALE

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---

**\$11.95 ea. 3 for \$29.95**

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DAVID'S MIDNIGHT MAGIC NAUTILUS  
AWARDWARE SEA DRAGON A.E.  
SKY BLAZER SHAMUS CASE II POOYAN  
PHAROAH'S CURSE CYTRON MASTERS

**\$14.95 ea. 3 for \$39.95**

BUCKAROO BANZAI THE HULK  
SEA FOX SAGA #2 PIRATES ADVENTURE  
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HELLCAT ACE RAID OVER MOSCOW

**\$22.95 each 3 for \$59.95**

MAXI GOLF GOONIES FANTASTIC FOUR  
THE NEVER ENDING STORY (64K) ZORRO  
GUNSLINGER (64K) 221B BAKER ST (64K)  
BRUCE LEE CONFLICT IN VIETNAM

---

**HARDWARE**

**STEREO for ATARI ST 8-BIT or  
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**SASC II Computer Stereo Amplifier**  
**System & \$40.00 ea. /\$79.95 pair**

**INDUS GTS-100 ST DISK DRIVE \$224.95**  
 (DS/DD - Reads & Writes to track 82)

**MARS COMET 360i DRIVE \$229.95**  
 (PC DITTO Compatible, 360K) bundled with PC DITTO \$299.95








# WASHTENAW ATARI USERS' GROUP



## WAUG Minutes -- Sept. Meeting

The meeting was called to order at 7:00 pm by President Mike Olin. Mike welcomed all new visitors, and directed them to Pattie Snyder-Rayl for more information about joining WAUG.

Mike Olin discussed the Atari MAGIC show and if you were unable to attend, you truly missed out on an exceptional show. He talked about some of the things that were there, such as the MEGAs, Atari's laser printer and 1200 baud modem, Atari PC, and the new XE Game system. He also mentioned some things that were not at the show: the 80 column card for the 8-bit, the new 5-1/4 drive, and it was mentioned that the 3 1/2 drive has been dropped for good by Atari.

Mike also mentioned members had not received the Sept. issue of Michigan Atari Magazine, for which it was thought Doug Feldman had collected the money. Apparently not enough money was collected for the entire summer. WAUG! purchased a few copies of the Sept. MAM and made these available to members at the end of the meeting. There was considerable interest to continue receiving MAM and participating in that magazine as in the past.

Mike listed the proposed meeting topics for the year. Topics include graphics/printers; repair and troubleshooting; and a music night.

For the December meeting, the officers have planned a Christmas party/MidiMaze tournament and one lucky member will win the MidiMaze software which was purchased by the club for this event. Raffle tickets for this software will be on sale at the WAUG! meetings, starting in October.

The rest of the WAUG! board members introduced themselves and very briefly described what they are doing for the club...

Vice President Pattie Synder-Rayl said that she was in the process of obtaining a room at Washtenaw Community College that WAUG: may be able to use free of charge. [ED: See Pattie's article in the Oct. Newsletter for more details]

Mike Olin announced Secretary Doug Feldman had resigned in order to devote more time to his family, and a special election will be held at the October meeting to fill the vacant position. [ED: Tim Grzechowski filled in as Secretary for this month. Thanks, Groovus!]

Bob Carlini was unable to make it to the meeting, so Mike Olin gave the treasurer's report. We have 19 new members and thanks to the disk sales at the MAGIC show we had a very substantial increase in our bank funds. The members were asked to consider what we should do with the money. A suggestion was to buy an 8-bit and an ST disk drive for use by the WAUG! disk librarians.

News Editor Bill Rayl told us of his plans for the newsletter, which include getting advertising, increasing the size of the newsletter, and starting monthly columns.

Mike Pieronek, the 8-bit librarian, talked about the disk sales at the MAGIC show, and that he had added three new disks this month. A number of other disks are being organized for addition to the library.

ST Librarian Bruce Urbanski reported that the ST library has risen from 23 disks to a total of 59 disks. This is due in part from a disk trade with the Toronto user group at the MAGIC show. New programs in the ST library include the Citadel BBS--runnable version and C source code, a full-featured public domain C compiler, networking software, and the list goes on.

A representative of Lighting Bolt Computers spoke to the members. The company sells hardware and software to user groups at a reduced rate, delivering orders at the next club meeting. Interested members were asked to fill out a questionnaire and price lists were available for ST hardware. For more information, contact a WAUGS officer.

There was a recommendation from Bill and Pattie that membership renewal dues be raised from \$5 to \$10. Discussion about this followed, and the increase will be voted on at the October meeting.

The meeting formally concluded at 9:20.





# TRI-CITY ATARI GROUP

**T.A.G. - SAGINAW, BAY CITY, MIDLAND**

**NEXT MEETING:** The Tri-City Atari Users Group meets the second Saturday of every month at 2:00 pm at the Rudy Zauel Memorial Library on the corner of Shattuck and Center in Saginaw. Upcoming meetings are scheduled as follows:

Notice → October 17, 1987 ← Notice  
November 14, 1987

\*\*\* OFFICERS of TAG are as follows:

LeRoy Valley	President	686-6796
Marty Schmidt	Treasurer/Sec.	792-6029
Al Jennings	8-bit Disk Lib.	790-1980
Joe Manelis	ST Disk Lib.	
George Stuart	News Letter Ed.	892-7545

Club dues are \$20.00 per year. For this fee you get the Michigan Atari Magazine. Support for both the 8-bits and the ST's, and full access to the club's public domain library. We currently have about 90 disks in the 8-bit library and 30 in the ST library. You can get copies of these disks AT NO CHARGE if you bring your own disk to copy on (time permitting) at the regular meeting. If you don't have a disk with you, you can get the 8-bit disks for \$1.00 each and the ST disks for \$2.00 each. Non-TAG members can get copies of the 8-bit disks for \$2.00 each and the ST disks for \$4.00 each. If you need to renew, do it now! If you haven't joined yet, then do it now!

## Presidential Address

The September meeting was everything that we expected. The room was packed with people (about 30) and we gained 2 new members! A lot of people were talking about ways to promote our club, and we even had a few volunteers to handle some advertising jobs. The club treasury is looking pretty good, and you can expect to see some raffles in the near future. I'm preparing a survey to address your needs and concerns which will be mailed to all

members. Expect to see it in your mailbox around the 1st of October. Please bring the completed survey to the October meeting. If you can't attend, then send the survey to me at the address on the survey form PRIOR to October 15th. I'd like to be able to tabulate them for the November meeting. Remember, if you don't fill out the survey you aren't allowed to complain until the next survey (???). See you all in October...

### HOT FLASHES FROM THE FUTURE!

October promises to be exciting month when Al Jennings demo's Award Ware...an inexpensive certificate generator for the Atari 8-bit. Come and find out if cheap is really cheap or do I have to take a loan out for my next program? In the same vein, Tom Wheeler will be demoing Certificate Maker on the ST. Come and see this excellent program!!

Remember, the club has purchased both of these packages and will be raffling them off at the meeting. (No really!! I'll even remember the tickets!)



## Meeting Minutes

### RELICS TO RELISH

Like Clue, if you think you're another Mike Hammer then you should've liked 222B Baker St. Ted Beauchamp did a fine job demonstrating this game by Datasoft. Ted gave several good tips on speeding up game play and maneuvering Sherlock Holmes around the streets of London. News Station that Char Davis demoed back in, in, in well I can't remember the month, was finally raffled off. Nelson Greene was the proud winner of News Station, a type setter that uses Print Shop icons. Al Jennings let TAG raffle off two games Bop & Wrestle and an old bowling game. The proceeds minus \$5.00 went to the treasury. Let's see, now where did I put that program I no longer use... Meanwhile, in the ST realm... PC Ditto, the IBM emulator, was demoed first by LeRoy Valley. After

**MICHIGAN ATARI MAGAZINE**

**14 October 1987**

running the program, LeRoy proceeded to run IBM DOS 3.30, Lotus 123 (release 2a), DBase III+, and an assortment of public domain utilities. Everything performed flawlessly, and the emulator worked as expected. Various setup features of PC Ditto were demonstrated and some of the current problems (including the hard drive problem) were discussed. All in all, this is an EXCELLENT package and works as advertised. If you need or desire IBM compatibility, then is an inexpensive way to obtain it.

The next goodie on the agenda attracted a lot of attention. This was LeRoy's new Color Computereyes ST. LeRoy brought a complete setup, including a Camcorder. He then demoed the unit by taking several pictures of members, and the results were excellent. Pictures taken at home usually use normal incandescent lights, but the lights in the library are fluorescent and the pictures taken were much better. The software Computereyes includes with the package is one of it's strongest selling points. Once the picture is captured, you can modify the picture on screen. This allows you to adjust colors, brightness, and contrast and view it before you save it. LeRoy then loaded up Publishing Partner and demonstrated how he could pull his graphic masterpieces into PP and make things like "Wanted Dead or Alive" posters. An extremely handy feature in this club!

LeRoy then loaded up Pixel Pro, a picture processing program offered in the latest STart magazine. Pixel Pro allows you to modify colors, invert images, "Chunkify" them (makes the picture look blocky or computerized) change tints and a host of other goodies. If you own or are buying Computereyes, then grab the latest issue of STart...It's a must!

#### \*\*\*\*\* TAG INVENTORY:

1 Old ATARI 800, 8-bit disks. Oh yeah, and some ST stuff too (stuffed in your left shirt pocket).

#### \*\*\*\*\* 8-BIT TIP:

If you have a cartridge from OSS that doesn't want to boot in your 130XE, shake the critter and see if it rattles. If it does chances are it's not fitting into the expansion port properly. CAUTION THIS FIX COULD VOID YOUR WARRANTY! Now for some fun. The problem: The cartridge doesn't have any screws to hold the PC board in place. That means the cartridge is glued together so to disassemble it you will need a fine tooth hack saw blade. Take the saw blade and slowly run it along the center seam of the cartridge until you are almost through, do this to both sides. Carefully using both hands cupped around the cartridge with your fingers slowly prying the cartridge apart, be careful and note the way the PC board comes

out. Now take a piece of paper and fold it so that it fits between the top of the case and the PC board. Reassemble the cartridge and use a rubber band to hold it together so that you can use Super glue on the seams. I can't guarantee this will work for you but it sure did save me fifty bucks.

#### \*\*\*\*\* EXPIRATION NOTICE \*\*\*\*\*

Remember, once your membership expires you'll receive NO more issues of the Michigan Atari Magazine!

\*\*\*\*\* B-bit Equipment Volunteers:  
Nelson Greene Monitor  
Ted Beauchamp Disk Drive  
Al Jennings Printer and interface

\*\*\*\*\* ST Equipment Volunteers:  
Dennis Wright Monitor  
LeRoy Valley 1040ST  
Tom Wheeler Printer and cable.

Once again, a big THANKS to all of you who loan your equipment to the club. PLEASE, if you're going to be late, or can't make it, CALL!! It's not fair to the rest of the people when there's no monitor, or drive for the system!



## Editor's Note

Editor's Note  
by Richard Barnes

We recently received a telephone call from Steve Godun of the New Jersey Atari Computer Group. It seems that in the Feb. 87 issue of Mid-Michigan Atari Magazine we printed a short routine to speed up the cursor on the XL and XE series. Steve originally but the Atari Tips on Z-Mag and then made a change. He had just read our issue and noted that we had not received the correction submitted to Z-Mag in a later issue.

The corrected version is as follows:

POKE 729,15 : POKE 730,1

where 729 controls how long to wait after a key is pressed before repeating the character. Address 730 controls the speed of the repeat.

Thanks goes to Steve Godun, the original author, for taking the time and expense to advise us of this correction.

# //////FEATURE SECTION//////

## Atari News

Atari MAGIC Show In Detroit (8/28-8/30)

By Steve Godun

ZMAG EXCLUSIVE (C)1987 Syndicate Services.

The Atari MAGIC (Michigan Atari General Information Conference) show attracted young and old alike. Some 50-60 software publishers, hardware developers, magazine publishers, and mail order houses attended the show. Important names in the Atari community were present, among them Keith Ledbetter of Express fame, and Neil Harris and Sandi Austin of Atari.

Important Atari supporters like ICD, Atari (of course), Hybrid Arts, Antic, MichTron, Astra, Abacus, and Innovative Concepts were all showing new hardware/software products for the Atari 8-bit and 16-bit computers.

My first stop in the gymnasium-sized Atari show was at Hybrid Arts' MIDI setup. At the heart of Hybrid Arts' display was the impressive 16-player MIDI-Maze game. Surprises were abound all throughout the show, but I was more than startled to see no less than 16 of the ill-fated PS3000 color monitor/disk drive units being linked to 520ST's for MIDI-Maze.

Almost all the time during the show, is was a free-for-all as people scrambled for one of the 16 positions. Hybrid Arts ran hourly tournaments that all could get in on. Winners for each tournament were given a pass to return to the show on Sunday to compete for the grand prize - a Casio CZ-320C keyboard and a stack of Hybrid Arts software. I happen to have won that prize (a little pat on the back please...).

Hybrid Arts also had two other stations set up, each running with a 1040ST and several keyboards. The show is always alive with very well created melodies. No Walkman units wanted here!

Next to Hybrid Arts was a large indoor tent that housed Atari Corp's products. Several 520ST-FM, 1040ST, and 130XE computers were running the most popular Atari software such as "Battlezone", "Rogue", and "Joust" on the ST's with "Planetarium" and "AtariWriter Plus" on the XE's. The XE Game System was also displayed running "Bug Hunt", the first game to use Atari's TV gun. Other Atari products were present, most notably the Atari PC (very nice unit, although very slow when compared to the ST speeds), the Atari Laser Printer (producing

ATARI LASER PRINTER, HARD DRIVE, MEGA



free samples of high resolution flyers), the Mega ST-4 (many of the other developers were also using pre-production models with no Blitter chip for demos, although Atari's model did indeed have Blitter installed), and the still-to-be -released SX-212 modem.

All models except for the Atari PC are clothed in Atari XE grey with slanted lights and an almost art-deco insignia (the word "Laser" on the laser printer is in a 'hot pink' color). The Atari PC is set up in bone white. A monochrome monitor was being used on the PC. No comment from the guys from Atari. Also, there was still no sight of the 8-bit 80 column card or the new XF551 disk drive. Atari claims problems adapting the SX-212 to the 8-bit, although on the ST it runs fine. The XF551 is "still very early in its development to be shown". No comment pertaining to the XEP-80. Hmm...

Atari is still "iffy" on release dates for these products. The laser printer, Mega ST-4, and the XE Game System are scheduled for mid to late September ("Definitely way before Christmas" says Neil Harris), and the Atari PC and SX-212 are to be released shortly thereafter.

Innovative Concepts, a relatively small company with some really neat 8-bit upgrades, showed several new products. A kit that allows you to install four function keys (like the extinct 1200XL) on any XL/XE computer was available for \$15. The keys are totally programmable (nice for making macros in modem programs), and default to cursor control, key click on/off, etc. The ICX-85 keypad (a modified Atari CX-85 keypad that needs no handlers yet works with



all 8-bit software) was available. A trade-in policy is in effect; Send them your CX-85 keypad and you'll save \$10 on the ICX-85. RAM-Aid is for owners of upgraded XL/XE Ataris.

Install this, and you now have the capability to perform a coldstart without turning your computer off, but still retain all data in your RamDisks. An external modem speaker, Modem-Mouth, is for modems who don't have one (like the Atari 835 and 1030). Contact Innovative Concepts for prices, information, and ordering.

Microdact of "Chipmunk" fame was there showing two new arcade games. "Dropzone" is a Defender-like game that offers high resolution graphics and excellent animation. "Solar Star" is a hybrid game that reminds me somewhat of the Tron "Light Cycles". You travel over a huge grid avoiding walls while trying to shoot and overcome energy areas and crystals. Both games are for the 8-bit Atari (hints of a C-64 version were dropped) and are scheduled for release on October 1st.

A most interesting product was shown by Quantum Microsystems. They were showing a pad that looked very much like a large (17.5"x11") white Koala pad, but it had a thinner, wired stylus and was connected to an ST. Moving the stylus across the pad simulates the movement of a mouse. Labeled as "ProTablet ST", Quantum claims their pad is much more accurate than the Atari mouse, allowing up to 250 lines per inch.

"ProTablet ST" is available now for \$395, and includes the tablet, digitizing pen, cable, and driving accessory.

ICD, along with the Keith "Mr.Express" Ledbetter, was showing their newest addition to the Express line of modem software, "BBS Express ST". Only for the ST, "BBS Express ST" is probably the best ST BBS program around today. "BBS Express ST" is just starting to ship for a list price of \$79.95. It features 40/80 column support, XMODEM and YMODEM protocols, threaded message bases, full descriptions on all UL/DL files, and COMPLETE sysop maintenance. Some lucky show purchasers got a personally autographed copy of the new program (at no extra cost).

Also being shown at the ICD booth was a 60-megabyte hard disk for the ST. It is actually two 30-meg hard disks in one sleek, attractive case, but offers more than a conventional hard disk. Besides the storage, the ICD model also contains a silent fan and a real-time clock/calander. The unit is large and strong enough to support an ST monitor. The model shown was not a complete model. No list price or release date was given.

When asked about SpartaDOS-X, the new cartridge-oriented DOS for Atari, ICD claims to be working on it but are having a few

difficulties in programming. This new DOS will be on a 256K ROM cartridge and will have a souped-up version of SpartaDOS 3.2 on it, along with a database and "whatever else we can think of". ICD is considering much input from the current Atari community, so if you have a suggestion for Sparta-X, send them your ideas!

When asked about problems with the MIO board, ICD claimed to have fixed all known bugs prior to June 1987 and is still shipping both the 256K and 1-meg models. The 80-column adapter is "loosing interest...because of a lack of a suitable market", so even that might not hit the streets in the near future. But, you never know.

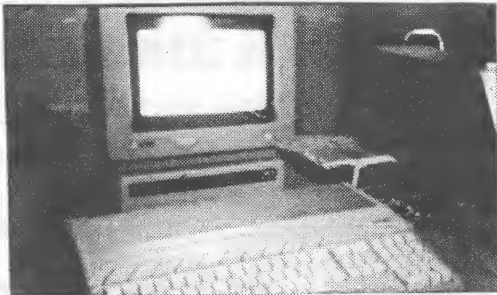
The MichTron display occupied most of the far wall. Their feature product was the arcade-to-home laser game "Dragon's Lair" (marketed as "Journey Into The Lair" for copy-right reasons). The version they had running was played on a 1-meg 520ST-FM, color monitor (for player input), Panasonic video disc player, and a Panasonic TV (for showing the pictures). The game is great in itself, although it loses just about all of its original arcade action. No longer is "Dragon's Lair" a split second arcade adventure; the player can now spend (literally) hours deciding on where to go. Joystick input has been substituted for a slow point-and-click mouse command. You actually have to tell the computer what to do; no more simple up/down/etc moves to memorize, you now have to say, for example, "Turn Swing Sword" to vanquish a creature in one instance. Personally, I don't think this will sell very well.

Plans to incorporate the other two major laser arcade games, "Space Ace" and "Cliff Hanger", are in the works. No release date was set, although pre-orders were being taken at the show.

Other MichTron releases include "Maz", a sort of computerized cat and mouse game where you must find the exit to a huge maze before your opponent does while avoiding the always moving cat. "Airball" is a offshoot of "Marble Madness", but with a more 'natural' background to it. Instead of a scrolling abstract maze, you now have a screen-by-screen maze lined with trees (well, that's what they look like) and such. MichTron was also offering RAM upgrades for the ST. A 2-meg 520ST kit and a 2.5-meg 1040ST kit are available, and both require no soldering inside the ST. Contact MichTron for details.

Alpha Systems had the "Turbocharger" on display. This is a double sided 8-bit disk that is packed full of useful ML subroutines that you can incorporate into your BASIC programs. Also for the 8-bit, the "Parrot II+"

ICD CORP'S ST MULTI-HARD DRIVE/CLOCK UNIT MAKES A NICE MONITOR STAND TOO.



was there. Those familiar with the original "Parrot" know that the hardware part isn't very sturdy or sensitive. The new version is VERY strong and VERY sensitive, and makes a clearer digitized sound - almost as good as an ST!

Speaking of ST sound, Alpha Systems also produced "Digisound", the ST equal to the "Parrot II+". The unit on display was quite impressive. Sound is practically flawless when compared to the original source. Excellent!

"Magic Sac+" wasn't as popular as Data Pacific had hoped. It certainly wasn't one of the busier booths at the show. On a 4-meg ST, the user can have up to a 3900K Macintosh capable of running most popular Mac software. However, in order to use the software, the user must have several things. Among them are a set of Mac ROM chips (so that the thing will work in the first place), access to a Macintosh computer, and communications software for both computers. Null modem cables are provided with the Sac+, a helpful surprise. The "Magic Sac+" also has its own clock/calendar for time/date stamping. Details were limited to an 8.5"x11" flyer, and reps at the show were somewhat unwilling to speak about certain compatibility problems. Contact Data Pacific for more details.

The show attracted many mail order houses. Mars Merchandising was there in full force with great deals on 8-bit and ST products stacked from floor to ceiling (literally). Sector One Computers, with not nearly as much stuff as Mars, was doing well in their double booth. Basic Bits And Bytes was a bonanza of Atari printers, 50%-off software, and more than I can list. They were the only place at the show selling the Indus ST DS/DD disk drive, a unit about 1/2 the size of an ST drive and runs (of course) much quieter and a bit faster. Rite Way Computers was offering membership into a software preview club along with many other nice deals.

Since this IS an Atari-oriented show, user groups were abound. GAG (Genesee Atari Group) was there showing off their newest Print Shop application, "Cute Labels" by Jim Steele. This will print out 1"x3.5" labels using multiple fonts and Print Shop icons. This is a VERY flexible label program! GAG is offering "Cute Labels" alone for \$9.95, and a pack of 6 Print Shop icon disks (around 600-700 icons) for \$20.

A complete "Cute Labels" package ("Cute Labels" plus the 6 icon disks) is available for a mere \$27. Incredible bargain!

MACE, Michigan Atari Computer Enthusiasts, was there selling back issues of "MACE Journal", trying to gain new members, and showing a few demos. Other user groups, WAUG (Washtenaw Atari Users Group), GLASS (Great Lakes Atari ST Support), CHADS (Capitol Hill Atari Owners Society), and of course, MAGIC were all present and showing off some of the latest ST and 8-bit programs, demos, and hardware (like the Mega ST-4).

Overall, the show was a grand success for user and vendor alike. Everybody went home happy and almost nobody left empty-handed. I was a bit sad when I walked into the large once-filled ballroom and saw nothing but soda bottles, product flyers, and empty bags. Oh well...There will be other shows. But the Atari MAGIC Show has proven, once again, that Atari computers are here to stay, this time for good.



16 STs LINE UP FOR "KILL A HAPPY FACE" MIDI-MAZE COMPETITION. THE TOURNAMENT WINNER GOT A CASIO SYNTHSIZER, COURTESY OF HYBRID ARTS. (PHOTOS BY JOHN NAGY)

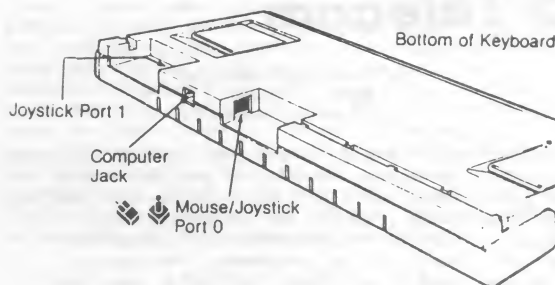
# MEGA ST COMPUTER

## Computer

**Processor** MC68000, 32-bit internal, 16-bit external architecture; 24-bit address bus; 8 MHz frequency

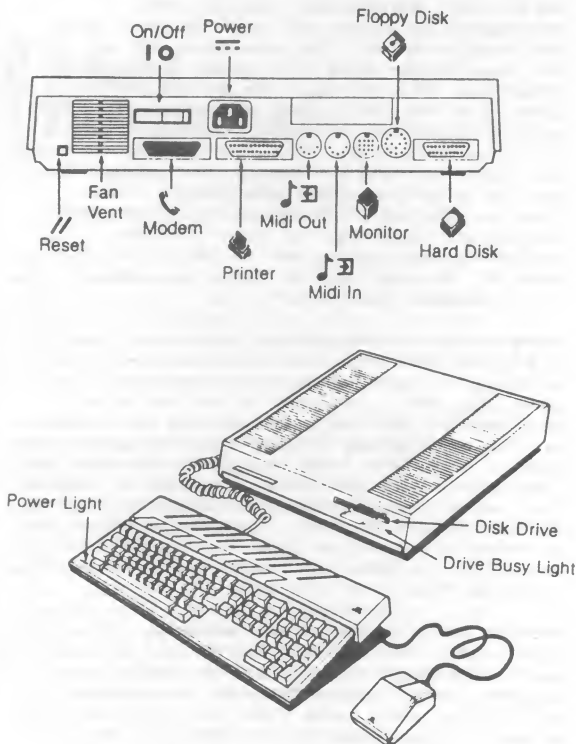
## Memory:

MEGA ST1™	1 megabyte (1,048,576 bytes) of RAM; 192 kilobytes (196,608 bytes) of ROM
MEGA ST2™	2 megabytes (2,097,152 bytes) of RAM; 192 kilobytes (196,608 bytes) of ROM.
MEGA ST4™	4 megabytes (4,194,304 bytes) of RAM; 192 kilobytes (196,608 bytes) of ROM



## The Computer's Back Panel

Many types of external devices, called peripherals, can be attached to the back panel of your MEGA ST Computer



## MEGA-DETAILS

from The Irishman's Software, Inc.  
1022 Highway A1A  
Satellite Beach, Florida, 32937

The Mega St has arrived in Florida !!!!!!!  
The Melbourne Computer Show, Sept 25-27, Melbourne Florida Displayed by The Irishman's Software, Inc. (305)-777-8257 will display the recently arrived 4 meg RAM Mega ST computers. Inside we found the Blitter chip, 4 banks of T1000-10 (1 megabit IC's) a battery backup clock, 2 (TWO) sockets for some kind of external interface. There is a slide in the case (Approx 2" x 1") for some future THING to come out of the case.

In some preliminary graphics timing tests (eyeballed!!) the bird flew across the screen at least 2X faster with the blitter turned on. Oh yes you can turn the blitter on/off via the mouse and a desk acc which is built into the machine. The fan is really quiet! The blitter, I think, is a flat pack IC, therefore how would one mount it in a present 520/1040??

The detachable keyboard which the mouse must plug into (you really knew that that would happen as the keyboard has the CPU that reads the keyboard and the mouse) is much better than the 1040. It is attached via a telephone type coiled cable.

**BAD FEATURE!!!!** Why the Hell did they put the ON/OFF and RESET switches in the back of the frick'n thing!!!! Minor point which probably will be corrected some day. But most people, like us attach the computers and accessories via a surge protector multipug outlet and turn it all off via it.

THANK YOU ATARI FOR SUPPLYING US WITH THE 4 MEG MACHINE FOR THE GREATER MELBOURNE FLORIDA COMPUTER SHOW!!!!

The Pros and Cons of  
BBS Success  
By Randy Pearson

The one major dream of any BBS Systems Operator is, quite obviously, to have a popular board. No SysOp would want to run a boring BBS that no one ever calls, right? But when you think about it, having a successful BBS definitely has it's own brand of problems. Nothing is ever all good or all bad. So, let's take look at the pros and cons of BBS success.

The most obvious advantage is having more callers. No SysOp only wants five callers a day. With more users comes more popularity, excitement, etc. But, when a board gets successful, and is pulling out 30-40 callers a day, there must be a lot more people TRYING to call, and getting that dreaded busy signal. How many times have you tried calling your favourite board and found it to be busy? But try a small board you rarely call, and get on first time. I don't know how many people have come up to me and said, "Man, I've been trying to get on your board for weeks, and it's always busy!" And many of those people tend to give up trying to call altogether, since it seems fruitless. It is to be expected, but I always wonder just how many autodialers are fixed on my BBS at 4:00 pm on a weekday afternoon, and how many of those will give a shrug and give up.

With more callers comes more activity in the message base. Those two usually go hand-in-hand, and Fletcher Memorial, my BBS, is no exception. Back when I first started, I was getting maybe 10-20 messages per day. But as I got more popular, the number jumped to 50 per day, sometimes as many as 80! I always loved my message base when it was rolling in high gear. All those conversations, all the fun, mayhem, excitement, etc.

But having that many messages per day has caused a lot more problems. For one thing, a person has to stay right on top of it. If you skip a day, there could be 160 messages to read! So one must call every day so as not to get swamped. And once you miss a day, you dread calling, because you know how long it will take to get through the whole message base. Then you keep putting it off for longer and longer. Also, the message base currently holds only 350 messages, which means the whole base could completely recycle in a week. So, put it off for too long, and you've lost your mail.

And having such a quick running base, many people who might normally get into reading and writing messages, won't, since it will take up a lot of their time. So, the very fact that my message base is popular keeps many people off it, meaning I only have about 10-15 people participating and that's on the good days.

If a board is used a lot, that means the equipment gets used a lot more. I've lost at least two disk drives since I started nearly two years ago, and the Political Forum BBS has gone through a number of hard drives.

And, of course, with success comes problem users. I know that they aren't restricted to just popular boards, but the more popular a board is, the more weirdos that find out about it and bug you. By 'problem' I'm talking about a few different kinds. The first weirdo I got was a user who called himself 'The Destroyer'. At that time, I hadn't even thought about people calling up and not using their real names. It never occurred to me. So it was a new thing and I decided I didn't like it. So I told him to use his real name or nothing, and poof, he vanished. Since that time, I've had a few of them, surprisingly few had the intelligence to figure out what "Is that your REAL name?" meant. The ones that DID use their real name either were too stupid to follow directions, were pests to me (paging me 20 times in a row, etc.), were pests to others (writing stupid and offensive messages, etc.), and a few were both. The more popular you are, the more they find out about your place. Even got the occasional idiot who thought that, since we chatted once, we were now life long buddies and could call me voice anytime. (Advice to new SysOps: GET AN UNLISTED VOICE NUMBER!) Oh yes, and the hacker mystique. "Oh boy, I crashed Fletchers!"

Being successful means that people will like you, since they like your board, and will want to chat. I always enjoyed a good chat, especially with a new user or an old friend. So I didn't mind. But a person can only chat with so many people. Sometimes five people can page in a row and I for one don't like chatting THAT much! Some of these people never consider that maybe you're unable (or unwilling) to chat and will assume that you now hate them. A lot of these kids have no idea what they'll say to you until you break in, which usually makes for a boring chat.

Another thing on that basic subject: Eventually, your board will crash. That's a basic fact about running a BBS. And when it happens (and if people like your board), you will receive many calls from your loyal users wondering what happened and when it'll be back up. It may be a bit annoying, but it still is a LOT nicer to have users concerned and curious then to have them not care one way or the other.



Most of what I have mentioned about success has been negative. But besides the obvious niceness of being popular, you can get all sorts of help. On a couple of different occasions, the users complained about wanting stuff for the board (first more storage, than 1200 baud) and I said, "Ok, if you want it so badly, send me donations!" Now, if you run a board that no one cares one way or the other about, you won't get an old shoe! But when I needed \$80 for an Avatex 1200 baud modem, I got it within a couple weeks! Not only that, but they kept sending! I ended up with \$150 ABOVE the cost of the modem! With it, I gave my users (well, yea, and myself) an ST BBS. And believe me, there aren't many feelings greater than being loved by your people!

All of this basically shows that people care about your board. There are the obvious disadvantages, but knowing that, when you need help by way of a Co-SysOp or a few bucks or even a bit of moral support, your users will be there is a great feeling that I wouldn't trade for anything!

Randy

## Atari Technical

YOUR FIRST XL/XE MODIFICATION  
By Charles Cherry  
Reprinted from ABACUS, August 87

You all know that I love to cut up my computers and solder in all kinds of weird things. To me the word hacker refers to violent physical activity. I know that not all of you feel the same way. You like computers that work. Well I've found the perfect modification for XL and XE owners to get their feet wet.

I was reading a letter to the Editor of Current Notes (the newsletter of the Washington (D.C.) area users) from Roger Tolbet of Ozark, Alabama. It seems he grafted a 1200XL keyboard into an 800XL and discovered the 800XL operating system supports the 1200XL function keys! "So what," I hear you say. "No one ever wrote any software for the function keys." True. But the function keys do some pretty interesting things all by themselves. Like controlling the cursor. No more holding down the control key. I immediately opened my brother's 256XL (formerly an 800XL), drilled four holes in it for push buttons, and wired them in.

It works like a charm. This is something I have to have. Guess what. It works on my 320XE (formerly a 130XE) too. Here's how to do it.

Get four small normally open push button momentary switches (Radio Shack 275-1547 - \$2.69 for 4). Decide where you want to put them. I put them in a diamond shape above the CONSOL keys on my brother's XL. I put them on the side of my XE. Open up your computer and take off the metal RF shield. Install the buttons. Find U24 and U25 on the XL. I don't know the chip numbers on the XE, but they are easy to find. They are 16 pin chips and are near where the keyboard connector attached to the motherboard. They should say 4051 somewhere on them. Use the one closest to the front of the computer as U25 and the one behind it as U24. Wire the buttons as follows:

Button	U24	U25
Up	1	4
Down	12	4
Left	1	5
Right	12	5

(each button connects to both chips. One contact connects the indicated pin on one chip, the other contact connects to the indicated pin on the other chip.)

This is a real easy project and the rewards are great. I encourage you to try it. Give me a call if you need help (415-333-9519). Below is a section of page 202 from "Mapping the Atari" by Ian Chadwick. It explains the functions of the function keys.

### 96,97 60,61 FKDEF

The 1200XL has four redefinable function keys. FKDEF points (LSB/MSB) to their definition table—an eight-byte table for keys F1 to F4 and then SHIFT-F1 to SHIFT-F4. Each byte is assigned a value corresponding to an internal (not ASCII) code. The keys themselves are values 138-141 (\$8A-\$8D), but you must not assign a key its own value since it generates an endless loop. Initially points to 64529 (\$FC11).

The function keys perform the following activities:

Key Combination	Function
F1	Cursor up (ATASCII 28; \$1C)
F2	Cursor down (29; \$1D)
F3	Cursor left (30; \$1E)
F4	Cursor right (31; \$1F)

#### With SHIFT

F1	Home (cursor to upper left; 28; \$1C)
F2	Cursor to lower-left corner (29; \$1D)
F3	Cursor to start of physical line (30; \$1E)
F4	Cursor to right end of physical line (31; \$1F)

#### With CTRL

F1	Keyboard enable/disable toggle (not console keys)
F2	Screen display enable/disable
F3	Key click sound enable/disable
F4	Domestic/international character set toggle

Function keys are ignored with both a SHIFT and CTRL combination. You cannot redefine CTRL-function key definitions.



# ST

## ST Notes

By LeRoy Valley (TAG)

Well, this month I'm going to get away from reviews again and simply give you some ST Notes...better known as tidbits of information!

How would you like to run High res applications on your color monitor? Or how about Low and Medium res applications on your monochrome monitor? A new product called the ST Video Box by the E. Arthur Brown Company claims to do just that for the low cost of \$49.95!! No need to own two monitors AND an expensive switch box...just buy this clever gadget! Call 612-762- 8847 or 612-763- 6393.

Need a new printer? Lyco computer now has Panasonic 1080I's for \$139.95! This printer offers NLQ printing in every mode including condensed! Lyco 1-800-233-8760.

Need to format a disk fast? How about 18 seconds for a single sided disk? Or 35 seconds for a double sided disk? Check out a PD program on Genie called FASTMAT uploaded by yours truly.

Well, it's short and sweet this month. So until next month...bye!



## Software

### ST-TRANSFORMER CONFERENCE

Excerpted from CompuServe by Permission

In a continuing series of live conferences on CompuServe, many topics and programmers are available for dialog with any CIS user. In mid-September, CIS offered one such CONFERENCE with DAREK MIHOCCA, author of the "ST-TRANSFORMER", the much discussed "ATARI 800 EMULATOR". What follows is a condensation of CompuServe's published recap, and is reprinted by permission.

Chairman: Thanks for joining us everyone. I would like to thank Darek Mihocka for joining us tonight. Darek is the author of the ST-Translator (The Atari 800 emulator).

DAREK: I'd like to first of all thank Dave Groves and Dan Rhea and Compuserve for inviting me to this conference. I'm grateful for this opportunity to be able to discuss the ST Xformer, since much of what has been written

about it is heresay and not completely correct. There is a lot that I wanted to include in the ST LOG article that there just wasn't room for, so through this conference I hope that I can answer any questions anyone might have about the emulator, either in terms of using it, or playing around with the code. Questions?????

JEFF JONES: HOW COMPATIBLE IS IT?

DAREK: It'll run a lot. It doesn't support PM/G yet, so those programs won't too well. Programs that don't use PM/G are pretty compatible i.e. BASIC, MAC/65, BASIC XL, PAPERclip, Atariwriter, most public domain software, a lot binary files.

JEFF JONES: As far as machine code, how is its speed compared to the 800?

DAREK: The speed varies. Hold on. I'll send the specs through:

- 48K Atari 800 revision B operating system
- runs binary files and some cartridges - optional BASIC
- optional Fastchip operating system for faster BASIC and access to the XL graphics modes
- all 17 graphics modes including GTIA
- most keyboard keys, console keys, and 2 joysticks
- has a DOS-like menu, to load and run binary files - the current directory is D1:, so you can get up to 800K on a floppy, or 20Meg on hard disk
- disk I/O of course is about 10 times faster
- vertical blank interrupts are at real time
- random number generator, 3 voices of sound and some other hardware locations are supported
- runs only on a color monitor
- comes with complete Megamax C source code and pages of documentation, subroutine descriptions and suggestions for improvements, if anyone wants to hack on it.
- C programmers may find the code useful since it contains many useful routines for the ST, like fast character plotting, writing your own keyboard handler, joysticks, etc.
- DOES NOT SUPPORT player missile graphics or horizontal blank interrupts. The speed would be too slow. Future version may have these 2 features, as well as monochrome support. It is not easier to put in than color, since you have to represent 128 colors using only 2! Like the CP/M emulator and PC Ditto, the speed is a lot slower than the real thing. The current version runs at about 25% the speed when executing pure 6502 code. The actual number varies considerably from program to program depending on the amount of screen I/O, disk I/O and whether you are using the Fastchip operating system. You may get bursts where the program runs at 100% and other times at 5%.

JEFF JONES: I am just in awe at the amount of time that it would take to write.

MARK HOLMES: How well will graphics like games and such work on it? Like if I were to run Joust (800 version) on the emulator, would it have the 800-type graphics, or ST graphics, or what?

DAREK: Graphics are reproduced as closely as possible. All graphics modes are supported. The ST is not capable of reproducing all 256 8 bit colors, but I try to match it as closely as possible. You get about 60 different colors, out of 256.

Will P.: Darek, Would putting it in ROM help the speed any?

DAREK: nope. ROMs make no difference what so ever. The topic is discussed in the ST Log article.

Will P.: Well then, how big is this program?

DAREK: It's pretty small by ST standards. The ST Log version is about 45K long. The version I'm currently working on uses GEM so it's growing. The source code that will be published is about 160K long and is written in Megamax C. Should be lots of fun to anyone that loves to play with C!

Chairman: Darek, how soon can we expect the article?

DAREK: Well, you all know that Analog/ST Log has been a wee bit delayed for the last few months. It is in the September issue, but July/August just came out. I did receive my copy of it, so it should be pretty soon. 2 or 3 weeks probably. It'll be up here on Compuserve then.

MARK HOLMES: Are there any RAM locations that it specifically occupies? Like if I have a print spooler or desk accessory in memory, can one of those crash the program?

DAREK: It's relocatable, as with most .PRG programs. I've used it with different accessories, even ran it from within an accessory, so it should run on any color system.

MARK HOLMES: So you're saying it just uses the first available space it can find?

DAREK: Yes. If you load accessories first, there should be no problem.

bill a.: Is the Xformer strictly an 800 emulator, or can it "bank-switch" like an XE?

DAREK: The ST Log version is strictly a 48K computer. Bank switching may be an upcoming feature. What new features are added will depend on how much interest it generates with other programmers. It takes a long time to write all the various hardware emulation routines. I would think that bank switching wouldn't be trivial.

ROBIN M.: DAREK WHY DO YOU FEEL THERE HAS BEEN SO MUCH OPPOSITION TO THIS EMULATOR AND WHO HAS BEEN SUPPORTIVE?

DAREK: There hasn't been too much opposition to this emulator. I got a lot of support from many users groups, software companies, and individual users. There are early versions of the emulator floating around and most people that have seen those liked them. They should enjoy the latest version quite a bit. The only opposition was from Atari Corp.

Will P.: I just wanted to say that I hope Atari has noticed that Commodore has a C64 emulator for the Amiga in the vaporware stage.

DAREK: I'd like to mention that if anyone has any questions about my Apple emulator, and /or other emulators, feel free to ask them.

Ron Kovacs: Over the last 5 months or so, we have read alot about your problems with Atari... What is your current situation with Atari Corp?

DAREK: The current situation. Ha ha. There doesn't seem to be one! Neil Harris gave me the OK to release the emulator about 2 months ago, and that was the last time I spoke to anyone there. However, I have heard that at CES he didn't have too many kinds words about me or the emulator. On GENie, he called it a terrible program, and suggested that as soon as it comes out that "hackers" should fix it up. I'm not too pleased about his comments, but I think it only hurts Ataris image, considering the support I've received from everyone else.

Chairman: Darek, how long did it take you to write the emulator?

DAREK: I started the emulator over a year ago when I first bought the ST. My original intention, along with my partner Ignac Kolenko was to write a multi-processor emulator. i.e. 6502, Z80 etc. As it turned out, it was not trivial, so we narrowed it down to a 6502 emulator. We completed the Apple II emulator 2 days late for Compute's \$10,000 programming contest (darn!) so I then too took my time writing the 800 emulator. I released a demo in January, and completed it in May. That's the version that will appear in ST Log. I've improved it a bit since.

Chairman: Thanks Darek, I always like some of the history of a project.

bill a.: You're including the source code for the Translator, and you said that further development depends in part on other programmers. Do you hope to include enhancements written by others in a future version?

DAREK: Yes. Perhaps if enough people join in, the idea of the multi-processor emulator might actually become reality. You have to understand that I wrote this for fun. I have a full time job at Microsoft Corp. (no boos please) and only have a few hours a day to work on it. I've tried to make the program modular (for other CPU's) and wrote about 50K of documentation for the ST log article. That will hopefully motivate some people to write modules for say, the VIC 20, Trash 80 Coco, PET, etc. There is a lot of software out for these machines, and it would be super if one machine (the ST) could run all that software. Sort of close the compatibility gap.

bill a.: Which did you prefer writing, the 800 emulator or the Apple version? And is <grin> the C=64 your next target?

DAREK: The actual Apple II routines (after the 6502 engine was working properly) took 2 weeks. The Atari 800 hardware routines took 4 months. So I'll have to say the Apple II was more fun. (It worked sooner!) By the way, to get the Apple II emulator running, I only had to do 2 (yes two!) hardware locations. The Atari one has close to a hundred hardware registers and memory locations it has to support, just to get the word READY on the screen. eeeeh.

bill a.: <grin>

MARK HOLMES: do you have a list of programs that will NOT work (PM/G, etc)?

DAREK: I don't have a list. George and Jim at WACO have done most of the actual testing of the product. I personally don't have an 8 bit computer to compare it against. They have produced a video tape showing software running. Like I said before, forget PM/G for now. The remaining software works pretty well, even the CES robot demo and Atari's Christmas tree demo. I am currently trying to get Fujiboink to run. I live a block down the street from Xanth Computers, and was a bit embarrassed in their store when Fujiboink wouldn't run (the sound comes out perfectly though!). They send me programs that don't run, and I try to make them run. I've had pretty good success so far. Don't forget: most games are COPY PROTECTED. If you can't copy it over to the ST, it won't run!

bill a.: Darek, are modified display lists supported even though DLIs are not?

DAREK: Yes. Any display list you can create is supported. It IS limited by the capabilities of the ST. The ST has a 200 scan line limit, so some very high screens get cut off on the bottom. Can't do much about that!

MARK HOLMES: does the emulator restrict the memory to 48k, or can the ST use the free memory as well? you said something about 48k only.

DAREK: No. It is limited to the 52K of memory available. It is equivalent to an 800XL with the Translator disk loaded. You can't just slap on 800K of extra memory. However, you can use the entire free memory as a large disk, so you can get an 800K D1: drive (and it is a LOT faster than the actual 810 drive).

Chairman: Darek, what is the biggest hurdle you see to add the player missile graphics?

DAREK: The PM/G routines are already in the code. They are pretty fast BUT, and the big BUT, the hard part is not drawing them, it is erasing them quickly. This required buffering screen memory, etc. and as you know, the ST has 32K of screen memory. This makes PM/G quite slow to erase, so the code is never called. But the code is there for anyone to think over.

bill a.: You said there was another 800 emulator being developed?

DAREK: Yes. A guy named David Jones is developing cartridge based versions of the Atari 800, C64 and Apple II emulators. The cartridges will plug into the ST and allow you to hook up 810 drives directly. There is a demo of it in a few weeks at WACO. It is being developed as a commercial product and should be ready in about 6 months.

bill a.: Hmm if it's a hardware product, will it let you use 8-bit cartridges?

DAREK: yes. And plug in your 8 bit ROMs. However the guts of his are very similar to mine, i.e. all graphics are emulated through software, not hardware, so it will not be too much faster, if at all, than mine. It will have the advantage of being able to load copy protected software directly off the 810. However, I don't know how commercially feasible it is. After all, the product will cost you as much as a real XE! Since the Xformer is 100% software, and is public domain, it has the advantage that it can emulate the various computers with no extra cost. Cartridge based emulators might end up costing as much as the real things.

Chairman: Darek, do you foresee going to assembly routines for more speed?



DAREK: The main guts are 100% machine language. The speed can't be improved. (too much). For example, PC Ditto runs at about 20% the speed of a real PC. That may not sound too great, but it is the fastest that the 68000 can go, so it is a remarkable product. Much harder to write than mine.

Mowgli Assor: I was wondering, how are we supposed to GET the S/W there? I didn't notice a telecomm program included, so can we just download the S/W onto 3.5" disk via Xmodem?

DAREK: Since it is assumed that you will ONLY run unprotected P/D software (grin), you can download it very easily off any BBS that has 8 bit files, and Compuserve ATARI8 of course. If you have 2 modems, an ST and an 8 bit, you can copy over with Xmodem as you mentioned. The use a 30 foot long null modem cable at Xanth to transfer stuff over for me.

Mowgli Assor: OK. 2nd question - what is the front end for it? It looks like a Debugger/Disassembler.

DAREK: If yours looks like an Assembler, you either have the Apple II emulator or the January demo version. The front end of the real version looks like a DOS 2.0 menu. The current version under construction has a GEM based front end, to allow you to configure it easier.

Mowgli Assor: Hmmm, I have the Jan version & the Apple II thing. Where do I get the new vs?

DAREK: The new version will be included in the next (September) issue of ST LOG magazine, and will be public domain. That means it will be here on Compuserve very soon after the magazine comes out. I have agreed not to distribute it until then, since, understandably, ST Log wants to introduce it along with the article. I also prefer that, since it will mean nationwide distribution. If you depend on BBSs too much, files get "munched" along the way.

bill a.: I just wondered if you provide an R: handler so the emulator can access the ST's modem?

DAREK: No, there is no R: handler in the ST Log version. But I may put one in.

Chairman: Ok folks, thanks for joining us. End of formal CONFERENCE. "Bang Bang" "ouch" (darn.)

## Atari News

compiled by John Nagy

The new 1200 baud ATARI SX-212 modem isn't even out yet, and FIXES are being passed around for it. Although it WILL come with a built-in 8-bit SIO cable port to enable you to plug it right into your daisy chain, it is a DEAD-END (only one port!). Enough of us whined about a separate "adaptor" package for the 8-bit that ATARI relented and put the port on. HOWEVER, SX-EXPRESS! from Keith Ledbetter is almost but not quite finished. It is reported that by using the R-VERTER HANDLER available in the public domain, that HOMETERM (and therefore, perhaps AMODEM and others) can be made to work.

DAVID SMALL of DATA PACIFIC was showing his latest MAGIC-SAC and DISK DRIVE ADAPTOR at the ATARIFESTS lately. He says that his latest software makes the ST MORE COMPATIBLE with MACINTOSH SOFTWARE than even the MAC II! Version 4.5 has automatic CRASH PREVENTION, recovering from even SOFTWARE BUGS before you can crash, hard drive support with separate MAC and ST partitions, and allows EPSON printers and Apple LaserWriter support. The new drive adaptor plugs into the drive loop and controls ALL drives online so as to be able to READ AND WRITE in MAC format. VERY nice, as copy protected MAC software can now join the list of SAC-COMPATIBLE software. Projected price: \$225. Projected availability: any time now. DATA PACIFIC, (303) 733-8158.

WordPerfect, the long awaited ST version of the top-rank IBM and MAC word processor, should ship in October. Since it does ANY and EVERYTHING, it is thought of as worth the HEFTY (by ATARI standards) price of \$395. But STUDENTS are eligible for an equally hefty DISCOUNT, making the student cost only \$99! Write to "EDUCATIONAL DEPARTMENT, WORDPERFECT CORP, 288 West Center, OREM, UTAH 84057" and ask for the student direct order form. Even when you get a form, you may have to WRITE-IN the ATARI ST version as your choice on the order, since the new forms are not ready yet. I would list some features to convince you all of just how good WordPerfect is supposed to be, but don't have the dozen pages to spare.

WHITEHOUSE COMPUTER, a big advertiser in many club newsletter and magazines, has reportedly closed and filed bankruptcy. The Williamsport, PA mail order house specialized in, among other things, ATARI software and supplies. Apparently there are over \$200,000 worth of claims, and about \$20,000 in assets at the closing. If you lost money to WHITEHOUSE, you can expect to hear from the lawyers with a "cents on the dollar someday" offer.



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## MICHIGAN ATARI MAGAZINE

## 25 October 1987

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# Programming

## C LANGUAGE COURSE LESSON 3

by "R.S.", who has NOT been identified!

Publisher's note: This is the final lesson we have for this series. If anyone knows where they can find more, or who R.S. is, or would like to write further installments, let us know!

### Arithmetic and C

The arithmetic operators in C are nothing strange if you are used to another computer language (they are almost always the same). Lets go over them:

```
+ addition
- subtraction
* multiplication
/ division
```

These should be obvious to you. C, in addition, has some other arithmetic operators:

% Yields the remainder of an integer division (modulo)

++ Adds one to the value of the variable to its right (prefix mode), or the value of the variable on its left (postfix mode)

-- That same as ++, but it subtracts one instead of adding

```
+= Same as sample1 = sample1 + x
-= Same as sample1 = sample1 - x
*= Same as sample1 = sample1 * x
/= Same as sample1 = sample1 / x
%= Same as sample1 = sample1 % x
```

The last five are a special case. Suppose you wanted to add three to the variable "test," the statement (using the special assignment operator) would look like this:

```
test += 3;
```

This makes the C code much shorter, but less harder to read. Lets add one more special assignment form. This one I call a multiple assignment statement. Suppose that you wanted to initialize four variables all to zero. Lets use the conventional form first:

```
test1 = 0;
test2 = 0; ... etc
```

In C there is a much easier method, like this:

```
test1 = test2 = test3 = test4 = 0;
```

In this statement, all four variables get assigned to zero. Here is an example using all of the above arithmetic operators:

```
#include <stdio.h>
main()
{
    int sample1, sample2, sample3, sample4;

    sample1 = sample2 = 15;
    sample3 = 128;
    sample4 = 999;

    sample2 = sample1 * 15 / 2;
    sample1 = ++sample3 + 12;
    sample3 = sample4-- + 12 * (sample1 % 16);
    sample4 = sample1 * sample2 + sample3 -
sample4;
    sample2 += 19;
    sample1 -= sample4;
    sample3 *= -1;
    sample4 /= sample1;
    sample2 %= (sample3 + 16 * 2);

    printf("Sample1=%d\n", sample1);
    printf("Sample2=%d\n", sample2);
    printf("Sample3=%d\n", sample3);
    printf("Sample4=%d\n", sample4);
    printf("Sample1 Again=%d\n", sample1++ * 5 %
12);
}
```

A job that might keep you busy for a while would be to figure out what the output from this example would be. Before you attempt this, you should know about operator precedence in C.

The order of executing the various operations can make a difference, so C needs unambiguous rules for choosing what to do first. Each operator is assigned a precedence level. Here is a precedence list for the operators we have covered so far:

#### Operators (from high to low)

```
()
- (negative sign) ++ --
* / %
+ - (subtraction)
= += -= *= /= %=
```

What this means is that whatever is in parentheses, gets done first, then the negative sign and the increment and decrement operators.

Multiplication, division, and modulo come next, then addition and subtraction, and last (but not least) the assignment operators. If two operators appear with the same level of precedence, they (in most cases) are evaluated from left to right.

If you are familiar with other high level computer languages, you should know about operator precedence.

## Relational Operators

Now that we have discussed arithmetic operators, we can focus on relational (comparison) operators. This will also introduce you to making choices in C.

The following is a list of C relational operators:

```
< less than
<= less than or equal to
== equal to
> greater than
>= greater than or equal to
!= not equal to
```

Each comparative expression consists of a relational operator with a data name or arithmetic expression on each side. After the comparison, if the relation is true, the entire expression has the value of one. On the other hand, if the expression is false, the entire expression has the value of zero.

Here are some simple examples:

```
9 < 5 is true, and has the value of one
(15 - data) == data is false, and has the
value of zero
```

Do not get confused between relational equality (==) and the assignment operator (=). They are two different birds, the first one tests for equality between the operand(s) on the left, and on the right. The second (the assignment operator), assigns the value on the right to the variable on the left. The difference between these two operators is the source of much confusion, and can cause some rather complex problems to appear.

Now lets try a programming example using relational operators:

```
#include <stdio.h>
main()
{
    int sample1, sample2;

    sample1 = 1;
    sample2 = 10;

    if (sample1 == 1)
        printf("Sample1 is %d\n", sample1++);
    else
        printf("Sample2 is %d\n", sample2--);

    if (sample1 <= sample2)
        printf("Sample1 is %d, Sample2 is %d\n",
            sample1++, sample2--);
    else
        printf("Sample2 is greater than
            Sample1\n");
}
```

This program basically has no purpose. Its function is to demonstrate the use of relational operators along with introducing C comparison statements (if, else).

The general form of the "if" statement is:

```
if (expression)
    true statement
[else]
    [false statement]
```

The expression must be enclosed in brackets. The entire expression will be evaluated and the statement following the "if" will be executed if the expression is true (one). If the expression is false (zero), one of two things will happen. If there is an "else" clause, the statements following the "else" will be executed. If no "else" appears within the entire "if," then all statements within the "if" will be ignored and the next statement following the "if" will be executed. If you are familiar with another high level language, you should have no problems with "if" and "else" in C.

Please take the time to note how I indent various structures in C. After a function name, every statement is indented at least three spaces. If you are within an "if" structure, the statements will also be indented. This indentation is not mandatory, but rather, it improves the readability of the source code.

## Logical Operators

There are only three basic logical operators, so this should be easy. Here they are:

```
&& and
|| or
! not
```

I will assume here that you know about George Boole and the concepts surrounding Boolean logic, and truth tables. Even if you don't, these concepts are very logical (pun intended).

Some Examples:

12 > 3 && 5 < 2	is true
!(12 > 3 && 5 < 2)	is false
16 > 5    19 < 10	is true

Normally, C does not guarantee which parts of an expression will be evaluated first. The exception to this rule is the way in which logical operators are evaluated. C guarantees that the expression will be evaluated from left to right. Whenever a sub-expression is found that invalidates the entire expression, or whenever the truth of the expression is known,

the evaluation stops. If this confuses you, here is a program fragment to clear things up:

```
number = 1;
```

```
if (number == 1 || number == 12)
    printf("Number is valid\n");
```

The second half of the expression (after the "or") is not evaluated at all because the truth of the entire expression is known.

Here is an example program using logical operators:

```
#include <stdio.h>
main()
{
    int sample1, sample2, sample3;

    sample1 = 0;
    sample2 = 1;
    sample3 = 5;

    if (sample1 && sample2)
        printf("Sample1 and Sample2 are greater
than zero\n");
    else
        if (!sample1)
            printf("Sample1 is zero\n");
        else
            if (!sample2)
                printf("Sample2 is zero\n");

    if (sample3 == 5)
        printf("Sample3 is %d\n", sample3);
}
```

I bet your thinking that I left out the relational operators in the first three "if" statements (unless you are familiar with this form). These cases are a special form of logical operations. Since "true" is assumed to be any non-zero value, the first "if" statement is actually asking the question:

```
if (sample1 != 0 && sample2 != 0)
    printf ...
```

On the other hand:

```
if (!sample1)
```

Is really asking the question:

```
if (sample1 == 0)
```

Since "not" (or false) is a zero value. As you can see, these forms of logical operations greatly decrease the amount of source code to be typed in. The trade-off is that, if you (or someone else reading the code) does not remember about this form, it could be confusing.

## Exercise Time

Now that you have read your third C language course lesson, you should be able to answer these questions correctly.

1. Assume all of the variables in this question are "int." Find the "x" value for each of the following.

```
x = (9 + 16) * -5;
```

```
x == 12 + 6 / 16 * 5;
```

```
x = 19 * (7 > 5);
```

2. Find the error(s) in the following program.

```
#include "stdio.h"
#define EH "Take off"
main()
{
    int i;
    float zip;

    i = 2.5;

    printf("Program Start\n");
    +zip == 1 * 44;
    printf("%v", zip);
    printf("%s/n", EH);
}
```

3. Indicate whether the statements are true or false based on the value of the following variables.

```
c = 1;
d = 16;
e = 0;

(c && e)
(c || !c)
(c = 0 && d > 12)
((c && !e) || (d >= 16 && c == 1))
```

We have covered a lot of ground in this lesson.

Yet to be discussed are programming loops in C, multiple statement blocks, and the complex issue of keyboard input (complex on the ST). However, this is the final chapter of this tutorial in the possession of the Magazine editors, so would anyone like to take up the torch from here and write more? Let us know.

HEY! SUMMER'S OVER!  
COME TO THE MEETINGS!

\* \* \*

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## Last Hacks

ERROR MESSAGES  
Atari Never Told You About

Reprinted from The MACE Journal,  
Vol.5 No.6

[After the mass firings in Sunnyvale when Jack Tramiel took over, certain documents marked "Top Secret" were found at a rest area on I-80 East. The MACE Journal is proud to be the first to present this valuable information to the world of Atari users. -ED]

Note: The following error messages result from external malfunctions, including operator error, and are only implemented on machines containing the experimental PSI (Pretty Small Integrated) chip. To determine if your machine has the PSi chip installed, set up a loop to read location 53770 (\$D20A), the random number generator. Concentrate on a number between 0 and 255; if you can force the output of 53770 to equal your chosen number more than 87.4% of the time, you are one of the lucky few with the PSi chip.

**ERROR 256 - Operator Negligence**  
You failed to stare intently at your 410 Or 1010 recorder during the entire CLOAD process. Rewind the tape to within .01mm of the original recording position, take a deep breath, and hold it while watching the tape grind through the recorder. It has been shown that blinking during a cassette load can set up shock waves sufficient to knock the tape head out of alignment and abort the load.

**ERROR 257 - Keyboard Adhesion error**  
There is peanut butter or some other sticky substance underneath your keycaps. (This error does not occur on Atari 400's with the original membrane keyboard.) You can try to pry off the keycaps yourself and clean up the mess, or face ridicule by bringing your machine to the service department of your local computer store.

**ERROR 258 - Disk Damage Error**  
Your toddler has been trying to play your disks on his Fisher-Price Record Player. This error can also occur when disks have been used as Frisbees, coasters, or to jimmy a lock.

**ERROR 260 - TMF Error**  
A Transient Magnetic Field has erased all of the data on your disks and/or tapes. You are

now the owner of 253 flat black plastic squares which can be used (with little success) to tile your rec room floor.

**ERROR 261 - Release Data Shock**  
A previously-announced Atari product has been released on time: the shock was too much for your computer, which will be inoperative for the next three months, thereby bringing things back to normal.

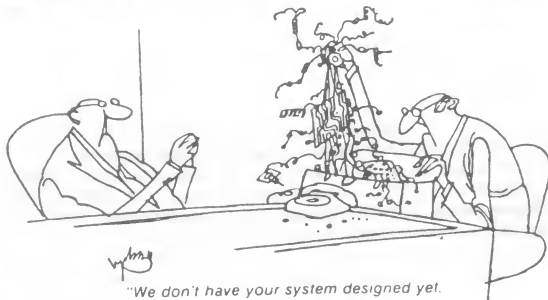
**ERROR 262 - Poor Programming Technique**  
You have aggravated your BASIC cartridge by writing "spaghetti code", full of tangled GOTO statements. In retaliation, it has renamed all of your variables as carriage returns (CHR\$(155)). No recovery possible.

**ERROR 263 - Late Night Error**  
This error most often occurs at 4 am and is due to the fact that the computer is being put to sleep by your yawns. Grinding No-Doze between the cartridge and its connectors will prevent the error, as it will totally disable your system and you will be able to get lots of sleep in the next few months while you are waiting for your machine to be repaired.

**ERROR 264 - Fed Detected**  
The FBI informant has tapped into your phone line and is monitoring your private downloads. For \$59.95 (plus \$2.00 shipping and handling) you can buy an Honesty Chip which will immediately switch the transmission to a public domain program. The Honesty Chip is available from I. M. Cott, Cell Block 534, San Quentin, CA 94013.

**ERROR 265 - CUI Error**  
The operator is guilty of Computing Under the Influence of prescribed substances. Power down and wait for operator detoxification before attempting further operation.

**ERROR 266 - Malfunction Timeout**  
It has been too long since an error has occurred, so the Error Generator, ERRGEN, at location 49155 (\$C003) has chosen to spice up your life. This error is seldom seen because of the unlikelyhood of operating your computer for more than 15 minutes without an error.



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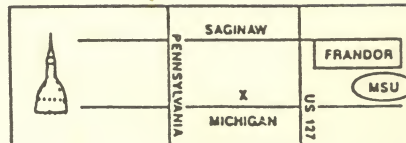
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